```
FILE 'HOME' ENTERED AT 11:35:39 ON 09 JUL 2008

=> fil stnguide
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.63       0.63

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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Jul  4, 2008 (20080704/UP).

=> fil hcapl
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.18       0.81

FILE 'HCAPLUS' ENTERED AT 11:38:50 ON 09 JUL 2008
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FILE COVERS 1907 - 9 Jul 2008  VOL 149 ISS 2
FILE LAST UPDATED: 8 Jul 2008  (20080708/ED)

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the second quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

=> s immobiliz?

L1      149489 IMMOBILIZ?

=> s enzym?

L2     1224139 ENZYM?

=> s sol (2a) gel

        679098 SOL
         18630 SOLS
        686723 SOL
                 (SOL OR SOLS)
        541024 GEL
```

```
        111586 GELS
        584356 GEL
                  (GEL OR GELS)
L3       64531 SOL (2A) GEL

=> s electrode#

L4      712527 ELECTRODE#

=> s multipl?

L5      617119 MULTIPL?

=> s plural?

L6      191800 PLURAL?

=> s suite

         13831 SUITE
          3560 SUITES
L7       16299 SUITE
                  (SUITE OR SUITES)

=> s conduct?

       1121924 CONDUCT?
        362791 COND
          4752 CONDS
        363997 COND
                  (COND OR CONDS)
L8     1253678 CONDUCT?
                  (CONDUCT? OR COND)

=> s polymer

       1203988 POLYMER
        957690 POLYMERS
L9     1609770 POLYMER
                  (POLYMER OR POLYMERS)

=> d his


     (FILE 'HOME' ENTERED AT 11:35:39 ON 09 JUL 2008)

     FILE 'STNGUIDE' ENTERED AT 11:37:10 ON 09 JUL 2008

     FILE 'HCAPLUS' ENTERED AT 11:38:50 ON 09 JUL 2008
L1       149489 S IMMOBILIZ?
L2      1224139 S ENZYM?
L3        64531 S SOL (2A) GEL
L4       712527 S ELECTRODE#
L5       617119 S MULTIPL?
L6       191800 S PLURAL?
L7        16299 S SUITE
L8      1253678 S CONDUCT?
L9      1609770 S POLYMER

=> s L1 and (l2 (l) L3) and L4 and L5-7 and L8 and L9
          1097 L2 (L) L3
```

```
L10          0 L1 AND (L2 (L) L3) AND L4 AND (L5 OR L6 OR L7) AND L8 AND L9

=> s L1 and (l2 (l) L3) and L4 and L5-7
          1097 L2 (L) L3
L11          1 L1 AND (L2 (L) L3) AND L4 AND (L5 OR L6 OR L7)

=> d scan

L11   1 ANSWERS   HCAPLUS  COPYRIGHT 2008 ACS on STN
CC   9-1 (Biochemical Methods)
TI   Fabrication and application of glucose biosensor enhanced by ZnO
     nanoparticles
ST   glucose biosensor fabrication nanoparticle enzyme immobilization
     electrode biocompatibility; zinc oxide
IT   Nanoparticles
        (ZnO; fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)
IT   Immobilization, molecular or cellular
        (enzyme; fabrication and application of glucose biosensor enhanced by
        zinc oxide nanoparticles)
IT   Biocompatibility
     Biosensors
     Enzyme electrodes
     Glucose sensors
     Sol-gel processing
     Temperature
     pH
        (fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)
IT   Polyvinyl butyrals
     RL: NUU (Other use, unclassified); USES (Uses)
        (fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)
IT   Wires
        (platinum; fabrication and application of glucose biosensor enhanced by
        zinc oxide nanoparticles)
IT   50-99-7, D-Glucose, analysis
     RL: ANT (Analyte); ANST (Analytical study)
        (fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)
IT   9001-37-0, Glucose oxidase
     RL: ARG (Analytical reagent use); DEV (Device component use); ANST
     (Analytical study); USES (Uses)
        (fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)
IT   64-17-5, Ethanol, analysis   67-63-0, Isopropanol, analysis
     RL: ARU (Analytical role, unclassified); ANST (Analytical study)
        (fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)
IT   7440-06-4, Platinum, uses
     RL: DEV (Device component use)
        (fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)
IT   111-30-8, Glutaraldehyde   1314-13-2, Zinc oxide (ZnO), uses
     RL: NUU (Other use, unclassified); USES (Uses)
        (fabrication and application of glucose biosensor enhanced by zinc
        oxide nanoparticles)

ALL ANSWERS HAVE BEEN SCANNED
```

```
=> d L11 ti

L11  ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI   Fabrication and application of glucose biosensor enhanced by ZnO
     nanoparticles


=> fil caplus medline biotechno biosis biotechds esbiobase scisearch
COST IN U.S. DOLLARS                            SINCE FILE      TOTAL
                                                     ENTRY    SESSION
FULL ESTIMATED COST                                  19.19      20.00

FILE 'CAPLUS' ENTERED AT 11:43:18 ON 09 JUL 2008
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=> s immobiliz?

L12     438901 IMMOBILIZ?

=> s enzym?

L13    6105054 ENZYM?

=> s sol (2a) gel

L14     107252 SOL (2A) GEL

=> s electrode#

L15    1097506 ELECTRODE#

=> s multipl?

L16    2793158 MULTIPL?

=> s plural?

L17     208807 PLURAL?

=> s suite

L18      52644 SUITE
```

```
=> s conduct?

L19    3096005 CONDUCT?

=> s polymer

L20    2194406 POLYMER

=> d his


     (FILE 'HOME' ENTERED AT 11:35:39 ON 09 JUL 2008)

     FILE 'STNGUIDE' ENTERED AT 11:37:10 ON 09 JUL 2008

     FILE 'HCAPLUS' ENTERED AT 11:38:50 ON 09 JUL 2008
L1        149489 S IMMOBILIZ?
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L3         64531 S SOL (2A) GEL
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L7         16299 S SUITE
L8       1253678 S CONDUCT?
L9       1609770 S POLYMER
L10            0 S L1 AND (L2 (L) L3) AND L4 AND L5-7 AND L8 AND L9
L11            1 S L1 AND (L2 (L) L3) AND L4 AND L5-7

     FILE 'CAPLUS, MEDLINE, BIOTECHNO, BIOSIS, BIOTECHDS, ESBIOBASE,
     SCISEARCH' ENTERED AT 11:43:18 ON 09 JUL 2008
L12       438901 S IMMOBILIZ?
L13      6105054 S ENZYM?
L14       107252 S SOL (2A) GEL
L15      1097506 S ELECTRODE#
L16      2793158 S MULTIPL?
L17       208807 S PLURAL?
L18        52644 S SUITE
L19      3096005 S CONDUCT?
L20      2194406 S POLYMER

=> s L12 and (L13 (1) L14) and L15 and L16-18 and L19-20
L21            1 L12 AND (L13 (L) L14) AND L15 AND (L16 OR L17 OR L18) AND (L19
                 OR L20)

=> s L12 and (L13 (1) L14) and L15 and L16-18
L22            4 L12 AND (L13 (L) L14) AND L15 AND (L16 OR L17 OR L18)

=> dup rem L22
PROCESSING COMPLETED FOR L22
L23            3 DUP REM L22 (1 DUPLICATE REMOVED)

=> d L23 ibib abs 1-3

L23  ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2008 ACS on STN  DUPLICATE 1
ACCESSION NUMBER:         2006:487842  CAPLUS <<LOGINID::20080709>>
DOCUMENT NUMBER:          145:265680
TITLE:                    Fabrication and application of glucose biosensor
                          enhanced by ZnO nanoparticles
AUTHOR(S):                Hou, Xianquan; Ren, Xiangling; Tang, Fangqiong; Chen,
                          Dong; Wang, Zhengping
```

CORPORATE SOURCE: Technical Inst. Phys. Chem., Chinese Acad. Sci., Beijing, 100101, Peop. Rep. China
SOURCE: Fenxi Huaxue (2006), 34(3), 303-306
CODEN: FHHHDT; ISSN: 0253-3820
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB ZnO nanoparticle has good biocompatibility, and is suitable for enzyme immobilization. In this study, glucose oxidase (GOD) was immobilized in the multiple membrane matrix consisting of ZnO nanoparticles and polyvinyl Bu (PVB) by a sol-gel method on Pt wire substrate, and then linked by glutaraldehyde. In this way a glucose biosensor was completed. The amperometric measurement of this biosensor was carried out with a double-electrode system, in which enzyme electrode served as working electrode and Ag/AgCl electrode as reference electrode. A background current in phosphate buffer solution, and a response current in glucose solution were obtained. So the difference between background current and response current was the current response of the enzyme electrode. The experiment results showed that GOD was firmly immobilized on the surface of electrode, and the current response was 100 times larger than that without nanoparticles. The current response maintained 70% of original response after the electrode was repeatedly used 46 times. The fabrication of electrode is simple and easily operated. Further, it was found that 35° and pH 6.8 are the set of optimal parameters for the fabrication of the electrode and the behavior of enzyme electrode appeared fine when mixed solvent of ethanol to isopropanol was 1:1.

L23 ANSWER 2 OF 3 SCISEARCH COPYRIGHT (c) 2008 The Thomson Corporation on STN
ACCESSION NUMBER: 2005:199016 SCISEARCH <<LOGINID::20080709>>
THE GENUINE ARTICLE: 897RP
TITLE: Simultaneous determination of pH, urea, acetylcholine and heavy metals using array-based enzymatic optical biosensor
AUTHOR: Tsai H C; Doong R A (Reprint)
CORPORATE SOURCE: Natl Tsing Hua Univ, Dept Atom Sci, 101, Sec 2, Kuang Fu Rd, Hsinchu 30013, Taiwan (Reprint); Natl Tsing Hua Univ, Dept Atom Sci, Hsinchu 30013, Taiwan
radoong@mx.nthu.edu.tw
COUNTRY OF AUTHOR: Taiwan
SOURCE: BIOSENSORS & BIOELECTRONICS, (15 MAR 2005) Vol. 20, No. 9, pp. 1796-1804.
ISSN: 0956-5663.
PUBLISHER: ELSEVIER ADVANCED TECHNOLOGY, OXFORD FULFILLMENT CENTRE THE BOULEVARD, LANGFORD LANE, KIDLINGTON, OXFORD OX5 1GB, OXON, ENGLAND.
DOCUMENT TYPE: Article; Journal
LANGUAGE: English
REFERENCE COUNT: 38
ENTRY DATE: Entered STN: 3 Mar 2005
Last Updated on STN: 3 Mar 2005
*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS*

AB An array-based optical biosensor for the simultaneous analysis of multiple samples in the presence of unrelated multi-analytes was fabricated. Urease and acetyleholinesterase (AChE) were used as model enzymes and were co-entrapped with the sensing probe, FITC-dextran, in the sol-gel matrix to measure pH, urea, acetylcholine (ACh) and heavy metals (enzyme inhibitors). Environmental and biological samples spiked with metal ions were also used

to evaluate the application of the array biosensor to real samples. The biosensor exhibited high specificity in identifying multiple analytes. No obvious cross-interference was observed when a 50-spot array biosensor was used for simultaneous analysis of multiple samples in the presence of multiple analytes. The sensing system can determine pH over a dynamic range from 4 to 8.5. The limits of detection (LODs) of 2.5-50 muM with a dynamic range of 2-3 orders of magnitude for urea and ACh measurements were obtained. Moreover, the urease-encapsulated array biosensor was used to detect heavy metals. The analytical ranges of Cd(II), Cu(II), and Hg(II) were between 10 nM and 100 nM. When real samples were spiked with heavy metals, the array biosensor also exhibited potential effectiveness in screening enzyme inhibitors. 

L23 ANSWER 3 OF 3 BIOTECHDS COPYRIGHT 2008 THOMSON REUTERS on STN
ACCESSION NUMBER: 2005-04181 BIOTECHDS <<LOGINID::20080709>>
TITLE: Simultaneous determination of renal clinical analytes in serum using hydrolase- and oxidase-encapsulated optical array biosensors;
urease, creatinine-deiminase, glucose-oxidase, uricase and peroxidase immobilization for urea, creatinine, glucose and uric acid analysis for kidney failure diagnosis
AUTHOR: TSAI HC; DOONG RA
CORPORATE SOURCE: Natl Tsing Hua Univ
LOCATION: Doong RA, Natl Tsing Hua Univ, Dept Atom Sci, 101,Sec 2,Kuang Fu Rd, Hsinchu 30013, Taiwan
SOURCE: ANALYTICAL BIOCHEMISTRY; (2004) 334, 1, 183-192
ISSN: 0003-2697
DOCUMENT TYPE: Journal
LANGUAGE: English
AN 2005-04181 BIOTECHDS <<LOGINID::20080709>>
AB AUTHOR ABSTRACT - An optical array biosensor encapsulated with hydrolase and oxidoreductase using sol-gel immobilization technique has been fabricated for simultaneous analysis and screening OF multiple samples to determine the presence of multianalytes which are clinically important in relation to renal failure. Urease and creatinine deiminase were used to detect urea and creatinine, while glucose oxidase and uricase were coimmobilized with horseradish peroxidase to quantity glucose and uric acid. Moreover, the concentrations of analytes in fetal calf serum were measured and quantified using the developed sensing system. The array biosensor showed good specificity for the Simultaneous analysis Of multiple samples for multianalytes without obvious cross-interference. The analytical ranges of the four analytes were between 0.01 and 10 mM with detection limits of 2.5-80 muM. High precision with relative standard deviations of 3.8-9.2% (n = 45) was also demonstrated. The reproducibility of array-to-array in 3 consecutive months was 5.4% (n = 3). Moreover, the concentrations of analytes in fetal calf serum were 5.9 mM for urea, 0.13 mM for creatinine, 3.3 mM for glucose,. and 0.15 mM for uric acid, which were in good agreement with results obtained using the traditional spectroscopic methods. These results demonstrate the first use of a sol-gel-derived optical array biosensor for simultaneous analysis of multiple samples for the presence of multiple clinically important renal analytes.  (10 pages)

=> logoff